

Patent Abstracts of Japan

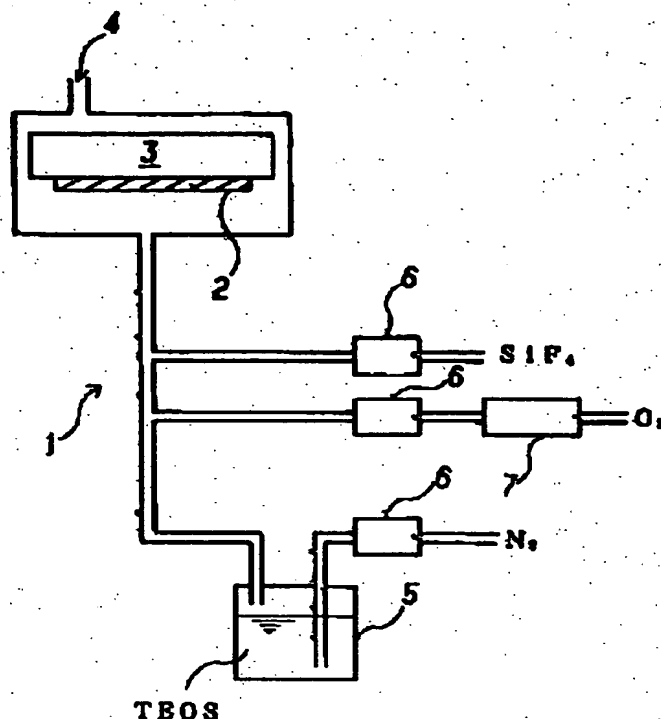
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TITLE : FORMING METHOD OF INSULATING FILM CONTAINING FLUORINE



ABSTRACT : **PROBLEM TO BE SOLVED:** To obtain a SiOF film having excellent embedding feature of a microscopic pattern and a low relative dielectric constant by a method wherein a fluorine-containing silicon oxide substance insulating film is deposited on the surface of a semiconductor substrate by an atmospheric pressure thermal CVD method using raw material of ozone, a fluorine-containing silicon compound and organic silane.

SOLUTION: A fluorine-containing silicon oxide substance insulating film is deposited on the surface of a semiconductor substrate 2 by an atmospheric pressure thermal CVD method using ozone, a fluorine-containing silicon compound and organic silane as raw material. For example, a silicon substrate 2 is retained at 400°C by heating with a heater 3, and a reaction chamber is brought in the state of 400Torr using an exhaust system 4. The N₂, which is the carrier gas of TEOS, is changed in the range of 0 to 350sccm, SiF₄ is changed in the range of 0 to 350sccm, and the oxygen, containing ozone of about 8wt.%, is introduced at the constant flow rate of 500sccm using an ozone generator 7. A fluorine-containing SiO₂ film is deposited on the silicon substrate 2 using an atmospheric pressure thermal CVD method.

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